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Socio-economic importance and utilization of *Spondias mombin* in Nigeria

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ABSTRACT

Objective: To investigate the socio-economics and medicinal utilization of *Spondia mombin*, commonly known as plum in English and iyeye in Yoruba. **Methods:** Three communities were selected in Abeokuta which was Itoku, Kuto, and Omida using purposive random sampling technique because of the concentration of users in the area. Structured questionnaire was administered to randomly selected marketers, consumers and herbalists from the three communities. Utilization and marketing margin were descriptively analyzed. **Results:** The results showed that the leaves were being used for child birth aid, cough, sore throat, efu dudu, antiseptic soap, malaria and stomachic. The bark uses included child birth aid, inflammation concoction, fever, stomachic, malaria, and efu dudu. The uses of the fruit included cure for dizziness, stomachic, eaten as food, and fibroid. The seed were also being used for child birth aid, fibroid, and stomachic. The marketing margin analyses revealed that trading on the plants was profitable with the bark having the highest margin which showed the level of its profitability. **Conclusions:** The study reveals the medicinal potentials and the socioeconomic importance of *Spondia mombin* hence the need to conserve the species from unsustainable exploitation to ensure its availability.

1. Introduction

The tropical rainforest of Nigeria is described as a reservoir of phytomedicine [1]. Many of the plants contained substances that can be used for therapeutic purposes in raw and cooked form to keep fit by human which can date back to ancient times [2, 3]. Though, through a series of trial this might prove to be wrong [4].

Nigerian forests contain over 560 species of plants but only 20% of these plants species are presently regularly utilized. Research continues to find appropriate uses for the rest. Forest produces wide array of economic products that can be wood and non-wood products like fruits, flowers and leaves [5]. Forest species such as orogbo (*Garcinia cola*), Neem (*Azadirachta indica*) and Asofeijeje (*Rauwolfia vomitoria*) have been noted to produce potent curative ingredients. Other forest species used as food includes Agbalumo (*Chrysophyllum spp*), African pear (*Dacryodes edules*) and African walnut (*Plukenetia conophora*).

Spondias mombin L., a forest tree that is native to the

lowland moist forest of the Amazon in Peru, Brazil, Venezuela, Bolivia, Colombia, the three Guianas, as well as the southern Mexico, Belize, Costa Rica and the west Indies. Studies have shown that *Spondias mombin's* bark and leaves are used in the treatment of athlete's foot in parts of Edo state, Nigeria [6]. Anti-inflammatory, expectorant and febrifuge actions of *Spondias mombin* fruit were also reported [7]. An independent study [8, 9] noted anathematic, sedative, antiepileptic, and antipsychotic effects of *Spondias mombin* during various trial studies. All this stresses the importance of the tree not just as an agroforestry tree but also as a powerful economic forest resource.

Spondias mombin is sometimes planted as living fence as well as for shade and its fruit. However, the socioeconomic importance and extent of utilization is to a very large degree popular among the native populace of the study area. While there is a lack of information on the plant and how it can be effectively used to alleviate poverty.

Based on this backdrop, the study was conducted to clearly reveal the extent of utilization and socio-economic importance of *Spondias mombin* in Abeokuta, Ogun state Nigeria.

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2. Materials and methods

The study was conducted in three[3] communities of Abeokuta, Ogun State. The State is located within latitude 7° 9' 33" North and longitude 3° 20' 54" East Structured questionnaire was administered to selected respondents that were involved in the use and sales of *Spondias mombin* parts. A purposive non-probability sampling technique was used to collect data from three major markets. Ninety respondents including marketers (30), consumers (30) and trade-medical practitioners (30) were randomly chosen for this study. The results were analyzed using Descriptive

Statistics such as frequency, and marketing margin analysis.

3. Results

The demographic characteristics of the respondents were summarized (Table 1). All the respondents were married; Majority of the respondent (39/90, 43.30%) had no formal education, 21% (19/90) has primary education. The general uses of *Spondias mombin* was presented in Table 2. From Table 3, it can be seen that the marginal profit between the mean cost price and mean selling price for the different parts of *Spondias mombin* is quite substantial and contributes to the livelihood of the respondents in the study area.

Table 1

Demographic characteristic of respondents (n=90).

Respondents		Frequency		
		(n=30,%)	TP (n=30,%)	C (n=30,%)
Gender	Male	30(100.0)	24(80.00)	16(53.33)
	Female	0(0.0)	6(20.00)	14(46.67)
Educational status	No formal education	19(63.3)	18(60.00)	2(6.67)
	Primary education	8(26.7)	8(26.67)	3(10.00)
	Secondary education	3(10.0)	4(13.33)	11(36.66)
	Tertiary education	–	–	14(46.67)
Age distribution	46 and above	1(3.3)	5(16.67)	–
	26–35years	10(33.3)	7(23.33)	18(60.00)
	36–45years	19(63.3)	18(60.00)	12(40.00)

M–Marketers, TP–Traditional practitioners, C–Consumers.

Table 2

General uses of *Spondias mombin* (Iyeye) in Abeokuta South LGA.

Plant	Reported uses
Leaves	Child birth aid, cough, sore throat, efu dudu, antiseptic soap, malaria, stomachic
Bark	Child birth aid, inflammation concoction, fever, stomachic, malaria, efu dudu
Fruit	Dizziness, stomachic, eaten as food, fibroid
Seed	Child birth aid, fibroid, stomachic
Root	Uses was not disclosed

Table 3

Marketing margin analysis for the different plant parts of *Spondias mombin*.

	Leaf	Bark	Fruit	Seed
Cost of stocking per bundle/ measure	100	1000	200	200
Total cost of transportation	30	30	30	30
Total retail cost	160	1300	250	250
Retailer's margin	30	270	20	20

Each trade assumed to stock one measure each of the plant parts traded in.

4. Discussion

From the result, the biodata of the respondents revealed that Marketing of NTFPs such as *Spondia Mombin* is gender biased as all the respondents were males (100.00%). All the respondents were married; this may indicate the marketing of NTFPs can be integrated to family line. Majority of the respondent (43.30%) had no formal education, 21.00% has primary education. This is an indication that fruit gathering and traditional use of *Spondia mombin* for medicinal purposes is not directly correlated to educational status but on level of information available and experience over time. However majority of the respondents are also above 35 years

of age, it could be attributed to the fact that it is an age-long profession and probably they have been involved since their youth age.

The results showed that all the categories of respondents revealed varied uses of the plant parts which showed the diversity of its uses. The leaves are being used for child birth aid, cough, sore throat, efu dudu, antiseptic soap, malaria and stomach ache. The bark is useful also for child birth aid, inflammation, fever, stomach ache, and malaria and efu dudu. The fruit is edible, serve as food, use in the cure of fibroid, stomach ache and it also cure dizziness. The seed is used for child birth aid, fibroid and stomach ache. All the uses of the leaves would have been possible because of some well known chemicals with pain-relieving action called caryophyllene as reported by Morton^[10]. Though the respondents almost did not release any information on the use of the roots because it was only 20% of the traditional medical practitioners that said it was useful for the purpose which was not revealed, Morton^[10] also reported the root to have antimicrobial activities useful against tuberculosis, diarrhea and vaginal infections.

The marginal profit between the mean cost price and mean selling price for the different parts of *Spondias mombin* is quite substantial and contributes to the livelihood of the respondents in the study area. For *Spondias mombin* leaf, the mean cost price, per bundle N100.00 and the mean selling price was N160.00, the marginal profit was N60.00. For the bark (per bundle), the mean cost price was N1,000.00, the mean selling price was N1,300.00, the marginal profit was N300.00. For the fruits (per basket), the mean cost price was N200.00 while the mean selling price was N250.00, the marginal profit was N50.00. The seed also had mean cost price of N200 per basket, mean selling price was N250.00 and marginal profit was N50.00.

The results indicate that the retailer's margin is substantial and the trade is worth doing as it contributes significantly to the livelihood of the people that are doing the business in the study area. Though sold in small quantity in the markets, plant parts attract considerable high prices according to this study. The prices also depend on their importance in the study area.

The socio-economic contributions and medicinal uses of *Spondias mombin* has been revealed in this study. The results of the study showed that the study area consisted of various medical plants and use of them for treating various health conditions is popular. Sequel to this, the use of *Spondias mombin* is used to treat various health conditions. It was quite amazing the income being generated from this plant parts which often is being underrated or overlooked. To ensure continuity and sustainability of forest products,

collectors of non-timber forest products should be asked to pay a token before collecting any plant parts from the forest. With the increasing human demand on health issues, there is need for more proper documentation of the use of forest plant's parts and more research should be carried out to expose the potentials of NTFPs in the Nigerian forest in curing various diseases affecting man.

Conflict of interest statement

We declare that we have no conflict of interest.

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